



Interval between pregnancies as a risk factor for preeclampsia

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Objective

The risk of Preeclampsia (PE) is at least twice higher during the first pregnancy, than during the second or later pregnancies. The hypothesis is that the risk of PE may be reduced with repeated maternal exposure and adaptation to specific foreign antigens of the partner. The finding that parity plays a role for the development of preeclampsia is not new. The increased risk of PE is associated with longer interbirth interval. The aim of this study is to evaluate and confirm the influence and the effect of parity and the interbirth interval on the risk of PE in our population.

Methods

We studied 300 normotensive and 100 PE pregnancies divided into two subgroups: mild (n=67) and severe (n=33) PE. This research has included only singleton pregnancies and has studied the following parameters: maternal age, parity, previous pregnancy history and interval between pregnancies. The study is based on 400 pregnancies with a mean age of 27.65 ± 5.04 years. The significant difference in the frequency of categories and age groups was tested with a method of multivariate analysis for proportion.

Results

Regarding the multiparous women, the interbirth interval was analyzed. The difference between the groups and categories of interbirth interval was tested with the ANOVA. The difference was at the level of $p < 0.001$. We concluded that the interbirth interval constitutes the major risk factor for PE. Moreover, more severe forms of preeclampsia are associated with longer interbirth intervals, especially more than 10 years. The difference was at the level of $p < 0.001$. Among women with no history of PE, the median interbirth interval was 4.24 years between the previous and actual pregnancy. Among women with mild PE, the median interbirth interval was 5.96 and finally, in the group with severe PE, it was 8.08 years.

Conclusion

Multiparous women who become pregnant, especially 5 to 10 years or more after their previous pregnancy, are as likely to develop preeclampsia as nulliparous women.

Table 1. Interval between pregnancies*

Interval between pregnancies	Normal pregnancies		Mild preeclampsia		Severe preeclampsia	
	n=160	%	n=23	%	n=13	%
<1	0	0	0	0	0	0
1-1,9	8	5	0	0	0	0
2-2,9	33	20,6	5	21,7	2	15,4
3-3,9	33	20,6	6	26,1	1	7,7
4-4,9	28	17,5	0	0	1	7,7
5-5,9	21	13,1	1	4,3	1	7,7
6-6,9	14	8,8	2	8,7	0	0
7-7,9	6	3,8	0	0	0	0
8-8,9	5	3,1	4	17,4	1	7,7
9-9,9	4	2,5	1	4,3	2	15,4
≥10	8	5,0	4	17,4	5	38,4
Mean value of interval between pregnancies**	4.24±2.39		5.96±4.02		8.08±3.48	
95% CI for mean	3.816 -4.659		4.845 -7.068		6.598 -9.556	

*The significant difference in the frequency of the category of time between the pregnancies was tested with the ANOVA; n- number of pregnant; **data are expressed as mean \pm standard deviation

Table 2. Interval between pregnancies

Interval between pregnancies	Normal pregnancies n=160	Mild preeclampsia n=23	Severe preeclampsia n=13
1-4.9	63.8	47.8	30.8
5-9.9	31.2	34.8	30.8
≥10	5.0	17.4	38.4

n- number of pregnant; †† ANOVA; p<0.001